



THE PORT AUTHORITY
OF NY & NJ

Robert A. Adams
ENGINEERING PROGRAM MANAGER
WORLD TRADE CENTER
John J. ...
CHIEF ELECTRICAL ENGINEER

Engineering Department
Design Division

The World Trade
Center
Electrical/HVAC
Upgrade Program

TOWER ONE AND TWO
LOW VOLTAGE
SUBSTATIONS
CONSTRUCTION AND
INSTALLATION

ELECTRICAL

SUBSTATION SS-75S
STAGE III LOAD
TRANSFER SCHEDULE
AND RISER DIAGRAM

No. Date Revision Approved

This drawing subject to contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent.

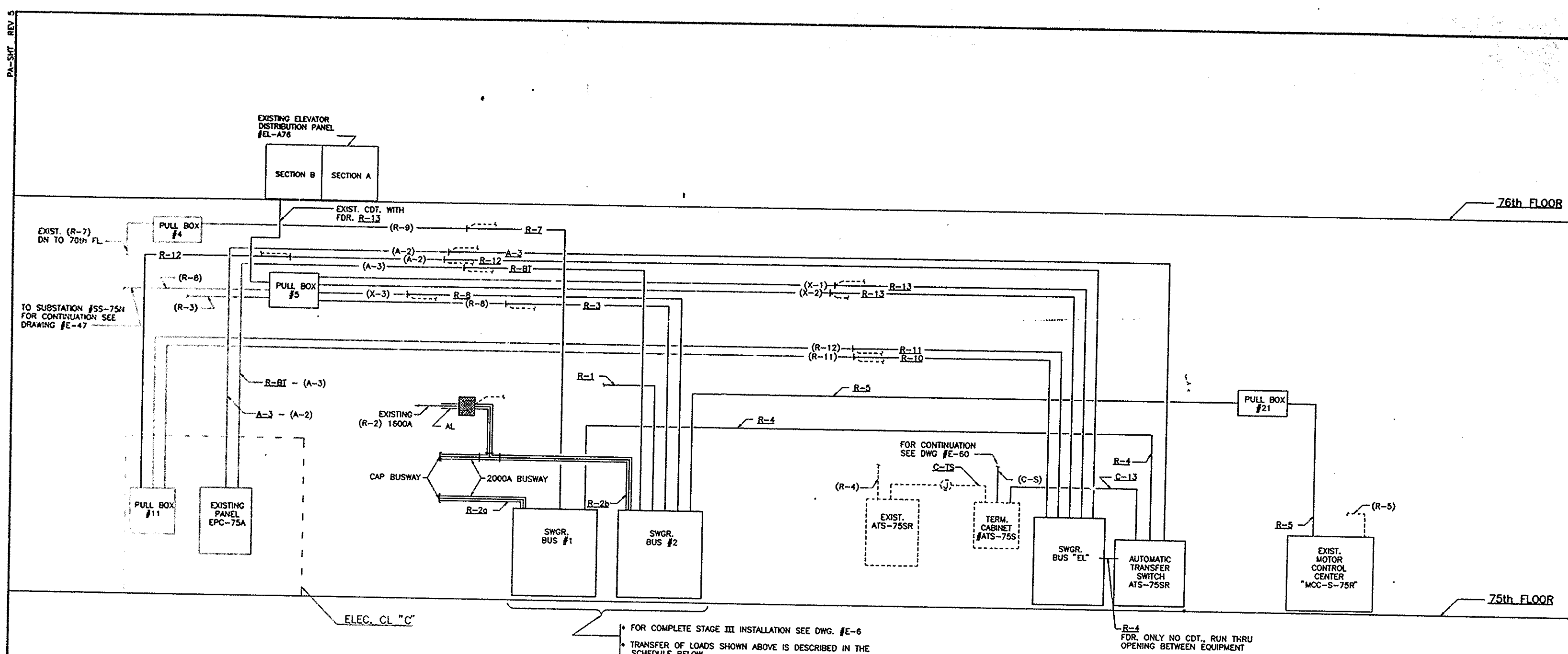
LEAHY/FISCHER LEAHY A.C.

Designed by Drawn by Checked by

Date 5-1-85 Scale AS NOTED

Contract Number Drawing Number

WTC 802.071 E-61



RISER DIAGRAM

STAGE III STEP (H) - SEE DWG. #E-6

(SEE NOTE #4)

STAGE III, STEP (H) - TRANSFER LOADS TO BUS #1, 2 & EL

CONDUIT DESIGNATION - BANK ELEVATORS -		LOAD OUTAGES - SEE NOTE #5	
R-4 NORMAL FEEDER TO BUS #EL a. - INSTALL R-4 CDT & WIRE FROM SWGR. BUS #1 TO BUS #EL VIA TRANSFER SWITCH (ENERGIZE) A-3 EMERG. FEEDER TO BUS #EL a. - CUT EXIST. CDT. A-2 (2 CDT'S) & REMOVE BACK TO EXIST. SWGR. b. - INSTALL CDT. A-3 FROM TRANSFER SWITCH TO ONE EXIST. A-2 CDT. & CONNECT. c. - INSTALL FDR A-3 FROM TRANSFER SWITCH TO EXIST. PANEL EPC-75A. * d. - "Y" SPLICE TO EXIST. FDR A-3 IN EXIST. PANEL EPC-75A (ENERGIZE) C CONTROL FOR BANK ELEVATORS a. - DISCONNECT EXIST. AND CONNECT CONTROL WIRING DESIGNATED ON DWG #E-98 R-13 BANK "D" ELEV. a. - CUT EXIST. CDT. X-1 & X-2, REMOVE BACK TO SUBSTATION. b. - INSTALL CDT R-13 FROM BUS #EL TO EXIST. CDT. X-1 & X-2, CONNECT. c. - INSTALL FDR R-13 FROM BUS #EL TO P.B. #5 LEAVING SLACK FOR PULL TO PNL. #EL-A76. d. - DISCONNECT & REMOVE EXIST. FDR R-13 FROM PNL. #EL-A76 BACK TO SWGR. * e. - PULL FDR R-13 FROM P.B. #5 TO PNL. #EL-A76 (ENERGIZE) R-12 BANK "C" ELEV. a. - CUT EXIST. CDT. A-2 BETWEEN P.B. #4 & P.B. #11, REMOVE BACK TO PNL EPC-75A. b. - INSTALL CDT R-12 FROM BUS #EL TO EXIST. CDT. (A-2) & FROM (A-2) TO P.B. #11 CONNECT. c. - INSTALL FDR R-12 FROM BUS #EL TO P.B. #11. * d. - CUT EXIST. FDR (R-12) IN P.B. #11 AND SPLICE TO LOAD SIDE. (ENERGIZE) e. - REMOVE EXIST. FDR R-12 BACK TO SWGR.		R-11 BANK "B" ELEV. a. - CUT EXIST. CDT. R-12 & REMOVE BACK TO EXIST. SWGR. b. - INSTALL CDT R-11 FROM BUS #EL TO EXIST. CDT. (R-12) & CONNECT. * c. - INSTALL FDR R-11 FROM BUS #EL TO P.B. #11, CUT EXIST. FDR R-11 IN P.B. #11 AND SPLICE TO LOAD SIDE. (ENERGIZE) d. - REMOVE EXIST. FDR R-11 BACK TO SWGR. R-10 BANK "A" ELEV. a. - CUT EXIST. CDT. R-11 & REMOVE BACK TO EXIST. SWGR. b. - INSTALL CDT R-10 FROM BUS #EL TO EXIST. CDT. (R-11) & CONNECT. * c. - INSTALL FDR R-10 FROM BUS #EL TO P.B. #11, CUT EXIST. FDR R-10 IN P.B. #11 AND SPLICE TO LOAD SIDE. (ENERGIZE) d. - REMOVE EXIST. FDR R-10 BACK TO SWGR. R-4 DISCONNECT EXIST. ELEVATOR TRANSFER SWITCH (A-3) a. - REMOVE FDR R-4 FROM EXIST. SWGR TO TRANSF. SW. * b. - CUT EXIST. "Y" SPLICE, FDR A-3 IN P.B. #11, REMOVE TAP TO EXIST. TRANSF. SW. & REMAKE SPLICE (ENERGIZE) C CONTROL FOR BANK ELEVATORS a. - DISCONNECT & REMOVE CONTROL WIRING FROM EXIST. TERMINAL CABINET TO EXIST. TRANSFER SWITCH, DESIGNATED ON DWG. #E-98. R-8 PONYA ALTERNATE TRANSFER a. - CUT EXIST. CDT. X-3 BETWEEN P.B. #5 AND SUBSTATION, REMOVE BACK TO SUBSTATION. b. - INSTALL CDT R-8 FROM SWGR. BUS #2 TO EXIST. (X-3) CDT. AND CONNECT. c. - INSTALL FDR R-8 FROM SWGR. BUS #2 TO P.B. #5 * d. - CUT EXIST. FDR R-8 IN P.B. #5 & REMOVE BACK TO EXIST. SWGR. e. - SPLICE TO EXIST. FDR (R-8) IN P.B. #5 (ENERGIZE)	
		R-7 PONYA A/C COMPUTER a. - CUT EXIST. CDT. (R-9) BETWEEN P.B. #4 AND SUBSTATION, REMOVE BACK TO EXIST. SWGR. b. - INSTALL R-7 CDT. FROM SWGR. BUS #1 TO EXIST. CDT. (R-9) & CONNECT. c. - INSTALL FDR R-7 FROM SWGR. BUS #1 TO P.B. #4 d. - CUT EXIST. FDR R-7 IN P.B. #4 & REMOVE BACK TO EXIST. SWGR. * e. - SPLICE TO EXIST. FDR (R-7) IN P.B. #4 (ENERGIZE) R-5 MOTOR CONTROL CENTER MCC-B a. - INSTALL R-5 CDT & WIRE FROM SWGR. BUS #2 TO MCC-R VIA P.B. #21 * b. - DISCONNECT EXIST. & CONNECT FDR R-5 AT MCC-R (ENERGIZE) c. - REMOVE EXIST. FDR BACK TO SWGR. R-BT EMERGENCY LTG. a. - CUT EXIST. CDT. A-2 & REMOVE BACK TO EXIST. SWGR. b. - INSTALL CDT R-BT FROM SWGR. BUS #2 TO CDT. (A-2) & CONNECT. c. - INSTALL FDR R-BT FROM SWGR. BUS #2 TO P.B. #11. * d. - CUT EXIST. FDR R-BT IN P.B. #11 & REMOVE BACK TO EXIST. SWGR. e. - SPLICE TO EXIST. FDR (R-BT) IN P.B. #11 (ENERGIZE) R-3 WATER SUPPLY PUMPS a. - CUT EXIST. CDT. X-3 BETWEEN P.B. #5 & SUBSTATION, REMOVE BACK TO EXIST. SWGR. b. - INSTALL CDT R-3 FROM SWGR TO EXIST. (R-8) CDT & CONNECT. c. - INSTALL FDR R-3 FROM SWGR. BUS #2 TO P.B. #5 * d. - CUT EXIST. FDR R-3 IN P.B. #5 & REMOVE BACK TO EXIST. SWGR. e. - SPLICE TO EXIST. FDR (R-3) IN P.B. #5, (ENERGIZE)	

I HEREBY CERTIFY THAT THIS IS A TRUE AND CORRECT COPY OF ONE OF THE CONTRACT DRAWINGS CONSTITUTING A PART OF CONTRACT NO. WTC-802-071 IN THE FORM IN WHICH SAID DRAWINGS EXISTED AT THE TIME THE SAID CONTRACT WAS EXECUTED BY THE PARTIES.
DATE 6/21/95 *Robert A. Adams* SPEC. WRITER
DATE 5/15/95 *John J. ...* ENGINEER OF DESIGN

- NOTE**
- FOR LEGEND SEE DWG. #E-1. FOR GENERAL NOTES AND ABBREVIATIONS SEE DWG. #E-2.
 - FOR NUMBER AND SIZE OF CONDUIT & WIRE SEE:
* DWG. #E-55 - CONDUIT AND CABLE SCHEDULE
* DWG. #E-98 - ATS CONNECTION DIAGRAM
 - FDR A-3 WILL TEMPORARILY SUPPLY BOTH NEWLY INSTALLED & EXIST. BANK ELEV. TRANSFER SWITCHES, VIA "Y" SPLICE.
 - CONDUIT CABLE AND BUSWAY DESCRIBED IN SCHEDULE STAGE III STEP (H) SHALL BE INSTALLED PRIOR TO ENERGIZING BUS #1, 2 & EL. FEEDERS THAT USE EXIST. FEEDER CONDUITS SHALL BE INSTALLED WITH SWITCHGEAR ENERGIZED.
 - ALL ELECTRICAL OUTAGES SHALL BE PERFORMED OUTSIDE NORMAL BUILDING OPERATING HOURS. SEE SPECIFICATIONS DIVISION 1 ENTITLED "CONDITIONS AND PRECAUTIONS" FOR DESCRIPTION OF ELECTRICAL POWER OUTAGE CATEGORIES.